RESTRICTED

SRI LANKA

Rehabilitation & Reconstruction of Telecommunication Infrastructure in Earthquake/Tsunami-hit Areas

Project No. 7SRL/05/012
TELECOM SURPLUS

MISSION REPORT

ITU Workshop on Emergency Telecommunications for Disaster Management in Sri Lanka

By

International Telecommunication Union (ITU)

23rd March 2006

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REPORT

By

Ms. Susan Espinueva; Mr. S.H.M. Fakhruddin; Mr. Wisit Atipayakoon; Mr. Kent Halling

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ITU Workshop on Emergency Telecommunications for Disaster Management in Sri Lanka

1 Background

After the December 2004 tsunami, International Telecommunication Union (ITU) (viz. United Nations specialized agency in Telecommunications) has formed an integral part of a global project that seeks to provide help to all the countries that were affected by the Tsunami or vulnerable to natural disasters.

Sri Lanka, one of countries hit by tsunami disaster, experienced severe damage to its telecommunication systems and suffered both human and economic losses. In response to Sri Lankan authorities' request for assistance, ITU has provided expert support in elaboration of telecommunication rehabilitation plans in the affected areas and in giving recommendations for emergency communications setup. The project was to study the current situation of the Country's emergency communications and consequently to give recommendations on the setup of National Emergency Telecommunication and/or National Early Warning System.

Under this project, ITU would deliver:

- Assessment report on Emergency Communications System in Sri Lanka
- Local workshop on Emergency Telecommunications for Disaster Management in Sri Lanka

This report is an outcome of the workshop which was jointly organized by Telecommunications Regulatory Commission Sri Lanka (TRCSL) and ITU. The one-day workshop was conducted on 23rd March 2006 at TRCSL's Auditorium in Colombo.

Figure-1: ITU workshop

1.1 Objectives of the Workshop

- To present the findings of the assessment on Emergency Communications Systems in Sri Lanka and to discuss recommendations;

- To present the current and on-going activities of government and international agencies, NGOs particularly in Early Warning Systems and Telecommunications for Disaster Management;
- To identify issues and concerns on telecommunications for the National Early Warning Systems (EWS) in order to enhance Emergency Telecommunications for Disaster Management;
- To formulate action plans based on identified issues, in addition to the issues and recommendations presented in the ITU report.

1.2 Participants

Participants in the workshop included government agencies whose mandates are related to disaster management/emergency telecommunications; private telecom operators; international agencies and NGOs who can play a vital role in communications during state of emergencies.

Figure-2: Participants of the workshop

Present during the workshop were key officials from *Ministry of Information Media; Department of Meteorology; Disaster Management Centre (DMC); National Disaster Management Centre (NDMC); IFRC Sri Lanka; Irrigation Department; Ministry of Defence Public Security, Law and Order; National Building Research Organization; Radio Society of Sri Lanka (RSSL); Sri Lanka Army; Sri Lanka Navy; Sri Lanka Air Force; Sri Lanka Police; Reconstruction and Development Agency (RADA, previously TAFREN); Sri Lanka Telecom; Dialog Telekom Ltd; Mobitel; Lanka Bell; Celtel Lanka (Pvt) Ltd; Suntel Ltd; Hutchison Telecommunications Lanka Ltd; UNDP Sri Lanka; UN Humanitarian Information Centre; Ceylon Electricity Board; Sarvodaya; Lirneasia.*

Full list of participants is in Appendix 2.

1.3 Working Method

The workshop was mainly divided into two sessions. The morning session was allotted for the opening ceremony and presentation of ITU report and on-going activities by individual organizations. The afternoon session was dedicated for discussion.

At the end of the workshop, issues were identified with some recommendations. *Most importantly, the participants agreed to set up the DIsaster COmmunication Management Team (DICOM). This is an interim team whose members consist of representatives from each organization.*

Workshop agenda is in Appendix 1.

2 Summary of Presentation

Mr. Kanchana Ratwatte, Director General of TRCSL delivered the opening remarks of the workshop. He expressed his gratitude to ITU for its effort in the development of the report and for initiating this workshop. He acknowledged the importance of the workshop and emphasized the vital role of telecommunications in disaster management and importance of this workshop.

Figure-3: Mr. Kanchana Ratwatte

2.1 Presentation by ITU

Mr. Wisit Atipayakoon from ITU regional office for Asia and the Pacific gave the project background and objectives of the workshop. He also gave an overview of the ITU and its role in emergency telecommunications particularly in disaster management.

Figure-4: Mr. Wisit Atipayakoon

He explained briefly the three sectors of the Union namely: *ITU-T, ITU-R, and ITU-D,* and their mandates in disaster preparedness and mitigation.

Finally Mr. Atipayakoon informed the participants of availability on ITU Website of the Handbook on Emergency Telecommunications published by ITU-D: www.itu.int/itu-d/emergencytelecoms

2.2 Introduction and Presentation by ITU Consultant

Mr. Kent Halling, ITU consultant, presented the ITU assessment report. He described the working method of the assessment, which he conducted with a number of government and international agencies as well as NGOs in Sep/Oct 2005 and gave overview of the following recommendations presented in the report:

Figure-5: Mr. Kent Halling

- Formation of the DICOM team
- Identification and training of ICT technicians and radio operators
- Conduct of regular communication drills
- Use of satellite phones
- Emergency alert via broadcasting
- Use of Police radio channels
- Recommendations for telecom operators; National Roaming and Call Priority

Details of each recommendation can be found in the ITU Assessment Report

He urged the Disaster Management Centre (DMC) to continue implementing activities identified in the *Roadmap for Disaster Risk Management.* As the agency mandated to oversee all disaster management related activities in the country, the DMC under the newly established *Ministry for Disaster Management* and also under the *Disaster Management Act 2005* should work in close collaboration with other agencies in pursuing the use of existing communication infrastructure in emergency situations rather than being test-beds for new technologies. If well managed, the available communication networks in the Country can be utilized for mitigating the impact of disasters.

He also emphasized that the ITU report was developed based on the DMC's Roadmap therefore ITU's recommendations should be seriously taken into consideration.

2.3 Presentation by Disaster Management Center (DMC)

Mr. S.M.D. Wijesooriya; Assistance Director of DoM, presented the overview of DMC and its organizational structure including the updates of initiatives related to disaster management.

Since the Sri Lankan Parliament had passed the "*Sri Lanka Disaster Management Act No. 13*" in 2005, the *National Council for Disaster Management (NCDM)* was established as per the act. The *Disaster Management Centre (DMC)* was then established under this NCDM as the lead agency on disaster risk management in the country. In December 2005, the Ministry for Disaster Management was established which later in January 2006, it was renamed to *Ministry of Disaster Management & Human Rights* with human right portfolio being added to the Ministry.

Main activities of the DMC include:

- *Disaster management technology, long-term mitigation*
- *Early warning* (receiving data from DoM, GSMB, NARA, and early warning centres in other countries, then analyzing data and disseminating early warning messages to communities through telephones, radio, TV, Police and military communication systems)
- *Emergency operations in case of a disaster* (this includes establishment of National emergency operation centre; Emergency operation rooms at provincial, district, and divisional levels; and carrying out emergency operations)
- *Preparedness planning* i.e. preparation of National disaster management plan and Emergency operation plans; preparedness for timely and effective response at national level and all sub levels
- *Training, Education & Public awareness*

In the future, DMC will establish the National Operations Centre; Tsunami Early Warning Centre; Multi-hazards Early Warning Centre; and 24/7 National Data Collection & Analysis Centre.

DMC will also be linked to District Secretariats, Provincial Councils, Divisional Secretariats, Local Authorities, and Village Committees. Disaster management activities would be decentralized to sub-levels and coordination would be boosted among Ministries, agencies and communities. It is worth noting here that part of its plan is the formation of technical committees such as Advisory Committee to the DMC, National Emergency Response Committee, and Hazards specific committees.

Currently the warning messages are disseminated to communities mainly through land/mobile phones, loud speakers (mounted on vehicles), TV and Radio. Facing challenges are breakdown and congestion of telephone systems as well as unavailability of telecom facilities in remote villages.

In the presentation, the requirements for communication used by the DMC are similar to the recommendations in the ITU report. These include the availability of satellite communication as a backup to district secretariat and provincial councils; access to pre-designated telephone lines for disaster communication; adoption of emergency communication through mobile phones and SMS facilities.

Finally, Mr Wijesooriya drew the participants' attention to the suggested communication network for the DMC as shown below

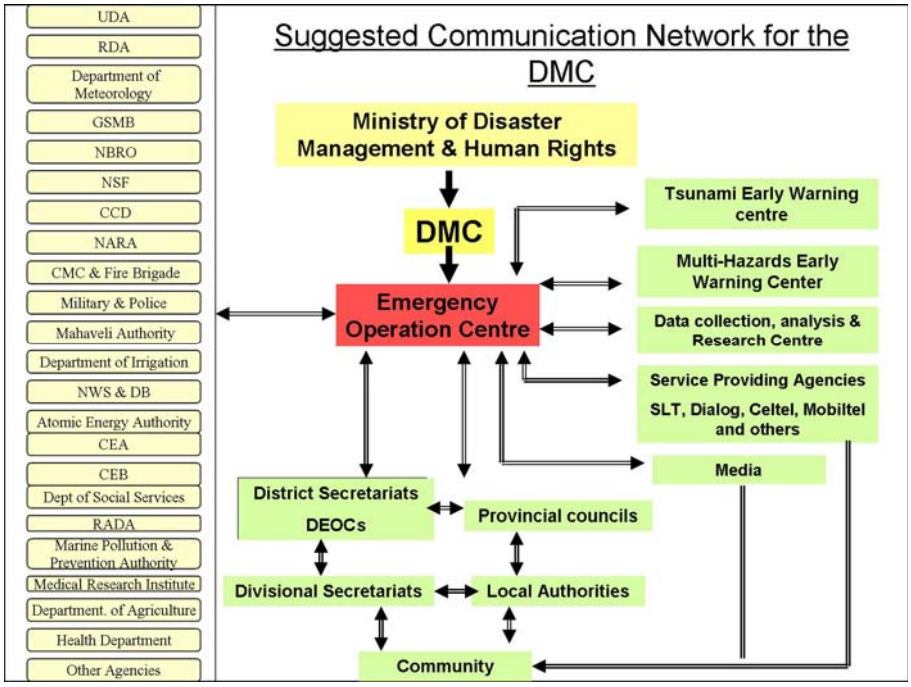

Figure-6: Suggested Communication Network for the DMC

2.4 Presentation by NDMC

Presented by Mr. Nimal Hettiarachchi, the Director of NDMC, the *National Disaster Management Centre* (NDMC) was established in 1996 and its function is focused on pre and post disaster activities in the country. Both the Disaster Management Bill and National Plan were prepared by NDMC. The Bill has been enacted by the parliament in March 2005 and will be activated once the formalities are completed. The NDMC is under the Ministry of Disaster Relief.

Main functions of the NDMC are:

- Developing and implementing disaster-related Programs including recovery Programs;
- Providing assistance to victims of disasters;
- Monitoring, coordination and evaluation of the activities of disaster response and recovery with relevant authorities and parties concerned;

- Awareness Programs for public officers, school children and the general public on risk and vulnerability reduction;
- Maintaining a Data Bank on disaster management for accumulation and dissemination of disaster information;
- Promotion of community-based disaster management Programs; and
- Setting up an emergency operations unit.

In the presentation by NDMC, Mr. Hettiarachchi indicated that some of disaster management-related challenges include inadequate coordination among agencies involved in early warning, implementation of the Road Map for Disaster Risk Management; limited access to communication systems; non-availability of District and Divisional contingency plan; inadequate risk, vulnerability, damage and capacity assessment; limited access to international and local support to cope up with disasters, and improved knowledge and skills of the officials related to response and recovery measures.

At the end of his presentation, Mr. Hettiarachchi raised some concerns that are worth noting such as the delineations of role and functions related to DM of the new Ministry and NDMC; the enhanced coordination with UN, international agencies and NGOs; and the strengthening of coordination among disaster-related organizations at the national level.

2.5 Presentation by DoM

Mr. Nuwan Kumarasighe; Engineer of DoM, gave an overview of the *Department of Meteorology* (DoM) and its on-going activities related to disaster management.

In short, the Department of Meteorology is under the Ministry of Environment and Natural Resources. Its mandates are to provide a weather service to the general public, agricultural and energy sectors, fishers, shipping, as well as national and international aviation.

Local communication between the Network Management Centre (NMC) in Colombo and regional offices is done through PSTN line using telephone, fax, Internet. At the regional level, DoM receives data from RTH in Delhi as part of the GTS network. The link bandwidth is only 50 Baud rate using V.34 as the data format (1 start bit + 5 data bit + 1.5 stop bit) in which is extremely slow.

After the 2004 tsunami, DoM was designated as Tsunami Early Warning Centre. It receives GTS data from Bangkok or Nairobi in addition to New Delhi. For dissemination of warnings, DoM uses the Media (TV & Radio), Police HF system, and communication network of Armed Forces.

Currently DoM is in the process of developing prototype of Early Warning System with USTDA. The technical assistance provided by USTDA would help establish systems to provide real-time acquisition of international seismic data plus GIS mapping, scenario modeling, decision support tools, systems integration, and training.

2.6 Presentation by RADA

Ms. Rachel C. Perera represented the Reconstruction and Development Agency (RADA) to give an overview, organization structure, and functions of the organization.

From the four stages of Sri Lanka's Disaster Recovery Cycle, RADA involved in two stages which are: Planning/Capacity Building, and Monitoring & Evaluation as shown in Figure-7.

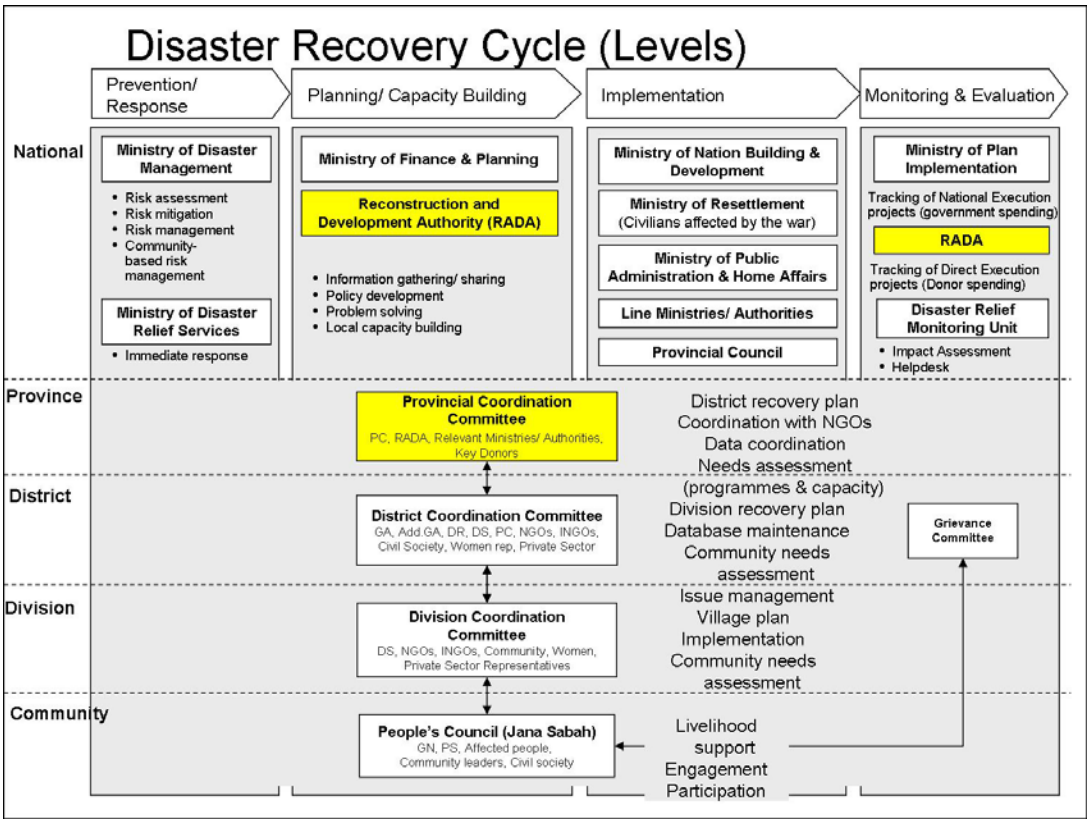

Figure-7: Disaster Recovery Cycle

RADA's mission is to *"accelerate and coordinate the reconstruction and development of areas affected by manmade and natural disasters, and ensure sustainable recovery of properties, livelihoods, industries and infrastructure to mitigate the effect of such disasters in the future"*.

She also discussed the updates on Housing, Livelihood, Health and Education, and Infrastructure initiatives of RADA.

2.7 Presentation by Irrigation Department

The presentation was given by Ms. P.P.G. Dias who is the Deputy Director, Hydrology Division of the Irrigation Department.

Ms. Dias briefed the participants on the flooding situation in Sri Lanka and its causes particularly focusing on five River Basins which are highly vulnerable to floods: Kalu Ganga, Kelani Ganga, Gin Ganga, Nilwala Ganga, and Mahaweli Ganga.

The main responsibilities of the Hydrology Division are:

- Collection, Processing, Storing, and Dissemination of hydrological data
- Conducting Hydrological studies
- Estimation of inflow into reservoirs, tank issues for irrigation, spillage, and variation of specific yields in different catchments

- Activating the flood warning system of major rivers

Currently the Irrigation Department acts as the central monitoring unit for the effective monitoring system of rainfall and river water levels of all major river basins. It is also in the process of developing a model for four of the rivers that are vulnerable to floods.

The Department will pursue the use of modern instruments and technologies to improve the existing hydrometeorological network and to train staff on the use of these technologies. With this in place, it is expected that the data collection system will be enhanced along with the provision of Emergency Response Communication System (ERC).

2.8 Presentation by Ceylon Electricity Board

Mr. P.B.Mahinda Wijayasantha representing the Ceylon Electricity Board (CEB) discussed CEB's communication system. The CEB with a working force of 14,000 employees provides electricity utility to over 3 million customers around the country. CEB has its own communication infrastructure i.e. Microwave, VHF/UHF, Power line carrier and Optical Fiber. The CEB also uses other commercial communication systems.

CEB's existing VHF/UHF communication system consists of 1,120 fixed and mobile, 710 handheld, and 23 repeaters. The National Control Centre is equipped with backup AC power, DC batter bank, Inverter units, Handheld VHF/UHF units, Mobile VPN, Satellite phones, and CEB proprietary T/P systems (PLC, Optical, Microwave). The centre operates 24/7 and is supported by hot/standby computers for data (SCADA) administration.

When the 2004 tsunami hit the country, CEB's communication system was barely affected with just one handheld, two fixed, four mobiles and Microwave damaged. CEB responded to the disaster by disconnecting power from the affected Grids, deployed teams with batteries, generators, fuel & mobile communication, established VHF/UHF communication, cleared debris, and restored power to key points within a shortest possible time.

Mr. Wijayasantha stressed that *the CEB's communication network can be effectively used in the state of emergency* and that CEB is willing to coordinate with other agencies during disasters.

2.9 Presentation by Dialog Telekom

The Dialog Telekom Ltd. was presented by its General Manager, Mr Monthilal De Silva, who presented the *"Possible ways that Dialog could Contribute to National Disaster Management Plan"*.

- **Assist in delivering information to general public in emergency situations**

  Use of *GSM and Thuraya satellite-based technology* to provide information from ground teams to Emergency bases; Use of existing *SMS Emergency Hotline (SMS112)* to enable users to report emergencies and receive immediate attention via two-way SMS facility; Use of *GSM technology* to warn users

- Provision of communication facilities

  Provide help desk facilities through Contact Centre which is a single point of information (as a crisis communications room). This service was provided to the

National Council for Economic Development and the Sri Lanka Red Cross Society following the recent tsunami disaster; *Mobilize ad hoc mobile stations to operate as communication and first aid centres*.

- Development of new technologies for transmitting emergency information and monitoring emergencies

  Dialog is carrying out extensive research in this area and is willing to participate in any proposed study/research by the Government of Sri Lanka. The research could cover such areas as monitoring of floods, earth quakes, water reservoir protection equipment, etc.

- Provision of priority access to Dialog network for emergency management agencies

  Allow subscribers from concerned agencies to access the Dialog network on priority basis for emergency calls. These subscribers could include: Executive leadership and Policy makers; Disaster response/Military command; Public health; Public services/Utilities and public welfare.

Apart from this, Dialog has contributed in long-term initiatives on two pragmatic solutions as follows:

1) Emergency Early Warning System

   The system will be piloted in two districts in Sri Lanka and will have the distinction of becoming the first national disaster warning system in Sri Lanka. The system will be compatible with CAP (Common Alerting Protocol)

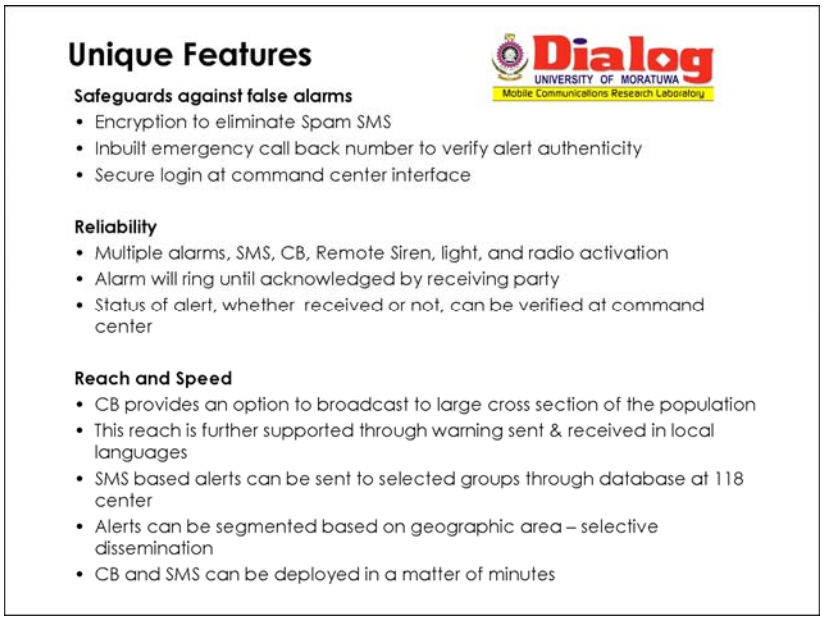

Figure-8: Features of the Emergency Early Warning System of Dialog

2) Dialog Amity Science Net

   Working in close collaboration with the Ministry of Education and the Dialog University of Moratuwa Research laboratory, Dialog is developing a distance learning facility for schools affected by the tsunami.

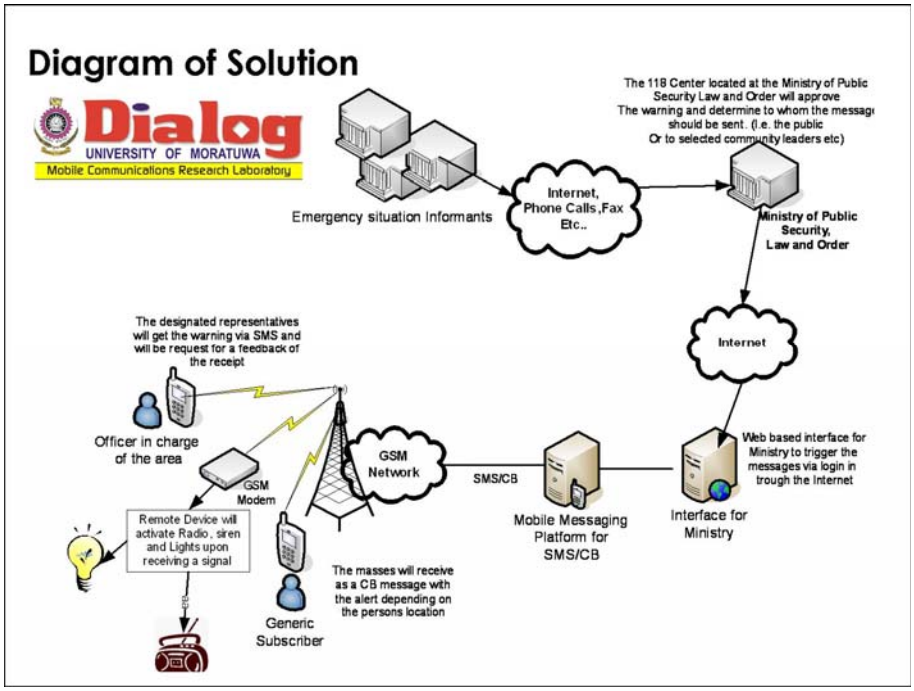

Figure-9: Schematic of Dialog's Amity Science Net

2.10 Presentation by Radio Society of Sri Lanka

Mr. Victor Goonetilleke from the Radio Society of Sri Lanka (RSSL) gave a presentation on Amateur Radio Emergency Telecommunications for Disaster Management.

In Sri Lanka, there are about 120 licensed members, and 35 are active. When the 2004 tsunami hit the country, highly skilled radio amateurs promptly responded and outstandingly assisted in relief operations by making communication work with their own equipment. This contribution was recognized and personally appreciated by the Prime Minister.

Mr. Goonetilleke stressed that these people are dedicated and committed volunteers and most importantly, are experienced radio operators. They are willing to use their own equipment for disaster relief operations. Self contained service having a network of its own through HF and VHF radio.

It was mentioned that one of lesson learned from the tsunami disaster is the regulatory barrier that prohibited radio amateurs to use their equipment outside a licensed zone. He requested that this barrier should be waived at least in the state of emergency. Furthermore coordination and cooperation with the government during an emergency situation are very much needed.

Lastly Mr. Goonetilleke said that RSSL requests no funds from the government or any other agencies but recognition of their capabilities and contribution to communities. Their future contribution and strategy will include Comprehensive Disaster Preparedness Program liaising with Government, Connection to Echolink network, Communication points throughout the country, Establishment of repeaters to cover entire country, Offering of services to other interested organizations, and Providing training at school level. More information about the RSSL can be found at http://www.qsl.net/rssl

2.11 Presentation by Sarvodaya

The presentation was given by Dr. Vinya Ariyaratne, Executive Director of Sarvodaya. Main activities of Sarvodaya are to provide training to University students who are expected to educate adults and children in villages on the nature of hazards and to raise the level of awareness on the meaning of alerts and warning. The villagers together with their trainers will develop evacuation procedures, paths, and safe areas and what mitigating actions need to be undertaken as part of their training.

In addition, Sarvodaya also implements ICT for hazard warning system which can be used for disseminating warning messages to district center and individual persons.

Specific objectives are:

- To promote ICT as an effective and reliable warning technology
- To training ICT users on effective warning response
- To enhance the organizational development of a village to an effective warning response
- To consider or establish gender-specific response to hazard mitigating action
- To improve the degree of integration of ICTs in the daily life of villagers

2.12 Presentation by US-IOTWS

Mr. S.H.M. Fakhruddin presented the initiatives taken by the US government for Indian Ocean Tsunami Warning System (IOTWS) program. The program aims to strategic support to the five countries (Indonesia, Sri Lanka, India, Thailand, and the Maldives) under UNESCO ICG/IOTWS towards the development of an Indian Ocean Tsunami Warning System (IOTWS). Mr. Fakhruddin discussed about the program approach, ongoing activities and future plans of the program.

The program approaches to develop integrated “end-to-end” warning system, regional, national, and local level interventions, multi-hazard, addressing tsunami and other coastal hazards simultaneously, replication of best practices and catalytic impact and leveraged resources.

Figure-10: An End-to-End Tsunami Warning System for the Indian Ocean

Under IOTWS program in Sri Lanka, the Incident Command System for emergency response management for disasters, Tsunami Resilient Communities initiative, seismology exchanges and equipment upgrades, upgrading GTS and WAN systems, Radio and Internet Communication (RANET) system, strategic support on how best to manage national warning centers and to formulate and communicate warnings programs are going on. More information of the US IOTWS is available on the program website at http://www.us-iotws.gov.

3 Summary of Discussion

During the discussion, the participants identified some issues and concerns as well as recommendations in addition to those proposed in the ITU Assessment Report. A summary of the integrated recommendations are as follows:

1. Formation of a DIsaster COmmunication Management team (DICOM)
2. Identification and training of ICT Technicians/Radio Operators
3. Adoption of Emergency Alert via Broadcasting
4. Use of satellite Phones
5. Conduct of regular Communication Drills
6. Police to Investigate a More Efficient Use of Their Radio
7. Recommended Initiatives Towards Telecom Operators
    - 7.1. Contingency initiatives
    - 7.2. Advocate SMS use in emergencies, Improve its availability
    - 7.3. Sensor information via the mobile networks
    - 7.4. Priority and National roaming
8. Recommendations Related to the Road Map for Disaster Risk Management by DMC
    - 8.1. Technical Advisory Committee
    - 8.2. Policy, Institutional Mandates and Institutional Development
    - 8.3. Hazard, Vulnerability and Risk Assessment
    - 8.4. Multi-Hazard Early Warning System
    - 8.5. Preparedness and Response Plans
    - 8.6. Mitigation and Integration of Disaster Risk Reduction into Development Planning
    - 8.7. Community-based Disaster Risk Management
    - 8.8. Public Awareness, Education and Training

Detail of each recommendation can be found in the ITU Assessment Report.

Figure-11: Discussion

The discussion was very lively and participatory in a way that issues and concerns regarding Disaster Management and Telecommunications for emergency situations were identified. Participants made comments and suggestions in all the issues raised and considered the recommendations of ITU valid and relevant. Hence, immediate actions must be undertaken by the concerned agencies. In fact, some of the recommendations are currently being acted upon by some agencies and telecom operators. For instance, Dialog Telekom's initiative to offer the priority access to its network to concerned authorities is one of the recommendations by ITU on Call Priority.

As when telecommunication used for emergency situations was pointed out, participants agreed that *it is a matter of coordination and cooperation among agencies to utilize and optimize individual's telecommunication infrastructure. Putting in place proper processes and procedures, the country is capable of using existing resources for emergency communications effectively.* There must be a working group focusing its work on telecommunications for disaster management in particular. Its responsibilities should not be redundant but compliment to DMC's holistic framework.

Finally the meeting decided to form the DIsaster COmmunication Management team (DICOM) as recommended by ITU. This would be an interim team which in the mean time composes of representatives from each participating organization. The first meeting of the team will be scheduled soonest in order to determine *Terms of Reference* and to consider the appropriate selection of team members. ITU was also requested to facilitate the next meeting and to continue providing expert service in telecom-relevant area.

The workshop was officially concluded with the closing remarks by Mrs. P.R. Amarasiri, Director Legal Affairs, TRCSL.

The output of the workshop was presented and discussed with the Director General of TRCSL. ITU and TRCSL also formulated action plans for each of the issue identified in the workshop. It was emphasized by the ITU consultants that TRCSL should take the lead in convening the first meeting of the DICOM team, while ITU and ADPC will explore the possibility of providing further assistance upon request by TRCSL.

4 Issues/Concerns & Action Plan

ITU Workshop on Emergency Telecommunications for Disaster Management in Sri Lanka

23rd March 2006

Issues/Concerns and Action Plan

1) Overlapping mandates among three Ministries and among two operating agencies (DMC and NDMC) creates confusion.

Action: The issue will be proposed to DG, TRC in order to discuss the issue with the President.

2) Restrictions on the use of communication equipment belonging to authorized civilian institutions or frequency must be lifted during emergency situations. (Radio amateurs experience in December 2004)

Action: TRC would propose changes in the existing licenses

3) Certain frequencies in HF/VHF/UHF bands should be reserved for emergency situations.

Action: DICOM will suggest the frequencies. TRC will establish the policy/ rules to use the frequencies

4) Emergency communication should not only be for tsunami disaster but also for other hazards that are recurrent i.e. floods, etc.

Action: DICOM team will consider the issue.

5) There should be a National Disaster Management Plan being in place as soon as possible. In addition, the National Communications Plan should be developed as well.

Action: The ongoing development of Disaster Management Plan by the DMC needs to involve the DICOM team to focus on communication issues. TRC should start developing the National Communications Plan as soon as possible with support from DICOM team.

6) National roaming in the state of disaster is a valid concept however it is business-sensitive issue for telecom operators, then TRC should explore the possibility

Action: TRC will do the study as proposed in ITU Report: Recommendation 6.7.4 (Priority and National Roaming) and Appendix 5 and 7.

7) Call Priority is also a valid concept; however the issue is who should be given priority. Specific telephone numbers and organizations should be identified.

Action: DMC should identify priority list and TRC will do the study as proposed in ITU Report: Recommendation 6.7.4 (Priority and National Roaming) and appendix 6 and 7

8) Police must be equipped with effective communication facilities and training because they have 401 police stations.

Action: As proposed in ITU Report: Recommendation 6.6 (Police to investigate more efficient of their radio channels), and Recommendation 6.2 (Identify and educate ICT technicians and Radio operators), necessary actions will be taken.

9) The establishment of radio volunteer organization with certain allocated frequency must be explored.

Action: The DICOM will act as proposed in ITU Report: Recommendation 6.2 (Identify and educate ICT technicians and Radio operators) and action identified in the Item 3.

10) There is enough telecom facilities in place in Sri Lanka and the agencies involved in early warning system can access or avail these systems in their operation.

Action: It is not lacking of communication resources but coordination and cooperation among the agencies. The formed DICOM team will take necessary actions.

11) Standardization of messages e.g. Common Alerting Protocol (CAP) should be adopted so communities can understand

Action: The DICOM team will act as proposed in ITU Report: Recommendation 6.8.4 (Multi-hazard early warning system), Appendix-3 (Emergency Alert via Broadcasting), and Appendix-4 (RTU and Sensor Communication via SMS or Data channels GSM networks)

12) The use of existing communication system at the district or community level should be optimized

Action: As identified in the Item 10.

13) There should be a database of each agency's existing communication networks e.g. network topology so that those networks can be shared in the state of Emergency

Action: DICOM team will exchange the existing communication networks information available in the country and identify the shared possibility in case of emergency. TRC will take actions to secure the information for restricted users.

14) TRC should take the lead and responsibility to formulate the emergency telecom plan

Action: As identified in the Item 5

15) Management is a major issue for Disaster Management

Action: As identified in the Item 1

16) Not all participating organizations are aware of the existence of the Roadmap.

Action: As identified in the Item 5

17) Communicating the Road map with other agencies

Action: As identified in the Item 5

18) DMC should be equipped with all necessary resources as soon as possible. Other agencies have shown willingness to provide technical supports to DMC.

Action: As identified in the Item 1 and DICOM team will provide supports.

19) CEB communications network is not mentioned in the ITU report while its resources should be utilized during an emergency case

Action: CEB is part of DICOM team and the team will identify the use of CEB network in case of emergency

20) There should be only one common emergency number. Currently 119 used for all emergency cases and it connected to 401 police stations as well as to VHF radio. The number 118 is for receiving complaints

Action: DICOM team will ensure that 119 will be used in all emergency cases.

21) For the purpose of relief and rescue operations, it should be DMC's responsibility to brief international organizations on existing communication networks/plan and current situation in the country.

Action: DICOM team will assist DMC to establish the function.

22) Communication drills need to be conducted regularly

Action: DICOM team will implement the Recommendation 6.5 Appendix 3, 7, 8 and 9 in the ITU Report

23) Media plays a very important role in disseminating warning messages. DMC should be responsible for providing information to media and other institutions concerned.

Action: As identified in the Item 5

DICOM Team:

As proposed in the ITU recommendation 6.1 an interim DICOM Team has been formed consisting of the following members:

1) Telecommunication Regulation Commission – Mr. Kanchana Ratwatte, Director General

2) Telecommunication Regulation Commission – to be nominated by the DG

3) Ministry of Defence Public Security, Law and Order – Mr. Janaka Mudalige, Director Information Technology

4) Sri Lanka Army – Colonel KRP Rowel

5) Telecom Operators – Mr. Batholameuz and Mr. Michael de Silva

6) Radio Society of Sri Lanka, RSSL – Mr. Victor Goonatilleke, Former Chairman

7) Ceylon Electricity Board – Mr. Mahinda Wijesanma

8) Department of Meteorology – Mr. Nuwan Kumarasighe, Engineer

9) Disaster Management Center – Mr. Dhamnika Wijesoonya

10) Irrigation Department – Ms. P.P.G. Dias, Deputy Director / Hydrology Division

11) Sri Lanka Police – SSP R.S.P. Siriwardana, Director Communications

12) Sarvodaya – Dr. Vinya Ariyaratne

13) Sri Lanka Air Force – Mr. Rohan Pathirage, Group Captain

14) Reconstruction and Development Agency (RADA) – Ms. Rachel C. Perera, Director, donor/NGO/Civil Society Coordination

15) Sri Lanka Navy – Commander TWW. Leelarathna, The Command Electronics Officer (West)

5 Recommendations on Further Assistance

5.1) As the DICOM Team has been formed, it is recommended that TRCSL as a lead of this initiative convene the first meeting of the Team. During the first meeting, Terms of Reference (TOR) must be determined. Members of the Team will be appropriately re-selected taking into consideration organization's mandates, their responsibilities and contribution particularly in Emergency Telecommunications aspect of Disaster Management.

It is important to emphasize here the ITU's recommendation that "*A Disaster Communication Management Team is a natural independent function that can support DMC with expertise to accomplish the Road Map's intentions. It is recommended that TRC initially shall be responsible for this team and organize its first constituency meeting. At this initial meeting the objectives has to be agreed and put into writing.*"

The DICOM Team, shall:

- *Have TRC as the main sponsor, responsible for meetings and timely follow-up on agreed actions.*
- *Consist of representatives from authorities, institutions and companies actively involved in disaster communication, by staff, equipment or services.*
- *Proactively assure available means of communication for selected user groups in any foreseeable state of emergency in any part of the country.*
- *Proactively promote robust functionality and fast recovery of public voice, text and data services in case of emergencies.*
- *Actively inform and liaise with institutions involved in emergency and disaster management.*
- *Initiate workgroups to create solutions and activities in specific areas.*

TRCSL should officially inform all concerned stakeholders the outcome of this workshop especially the formation of the DICOM Team, and preliminary agreement on convening its first meeting.

RECOMMENDED NEXT STEP: ITU Regional Office for Asia and the Pacific assists TRCSL in facilitating the next meeting or workshop for this DICOM Team, and ensure adoption of recommendations presented in the ITU report. In addition, ITU in collaboration with ADPC and other interested international agencies should provide consultancy service to address some difficult issues raised by the Team.

5.2) Some regulatory issues discussed in the workshop i.e. National roaming, Call priority directly concern TRCSL as the regulatory body of telecommunications in the country. The meeting requested TRCSL to explore possibility of enabling these functions in the state of emergency.

Apart from that, some regulatory barriers that impede the use of telecommunication resources for disaster especially by Radio Amateurs should be waived during emergency situations. As Sri Lanka has ratified the Tampere Convention, the country should adopt the concept of the convention at a national level to facilitate the provision of prompt telecommunication assistance contributed by local entities to mitigate the impact of a disaster.

RECOMMENDED NEXT STEP: ITU, upon request by TRCSL, provide consultancy service for these regulatory matters: National roaming, Call priority, Tampere convention approach.

Appendix 1: Agenda of the Workshop

ITU Workshop on Emergency Telecommunications for Disaster Management in Sri Lanka

Date: 23rd March, 2006

Venue: TRCSL

AGENDA

TIME	SUBJECTS	SPEAKERS
SESSION 1:		
08:30 – 09:00	Registration	
09:00 – 09.10	National Anthem & Lightning of the Oil Lamp	
09:10 – 09.20	Welcome Remarks	– Mr. Kanchana Ratwatte Director General (TRCSL)
09:20 – 09.40	Project Background	– Mr. Wisit Atipayakoon Consultant (ITU)
09.40 – 10:00	Introduction of participants and working method of the workshop	– Mr. Kent Halling Consultant (ITU)
10:00 – 10:20	*Tea Break*	
SESSION 2: 10:20 – 13:00	*Chairperson Mrs. P.R.Amarasiri , TRCSL* *Co Chairman Mr. Kent Halling, ITU* **Presentations by individual agencies**	
	▪ ITU Assessment Report	– *Mr. Kent Halling*, Consultant (ITU)
	▪ Status of Early Warning System and Emergency Telecommunications in Sri Lanka	– *Wing Commander Dhammika Wijesooriya* Deputy Director, DMC – *Mr. Nimal Hettiarachchi*, Director NDMC – *Mr. Lalith Chandrapala* , Deputy Director, DoM, – *Ms. Rachel C. Perera*, Director, RADA
	▪ Presentations on on-going activities related to Emergency communications/Early Warning Systems by individual participating organizations.	– *Ms. P.P.G.Dias*, Deputy Director, Irrigation Department – *Mr. P.B.Mahinda Wijayasantha*, Chief Engineer,Ceylon Electicity Board – *Mr. Mothilal De Silva*, General Manager Dialog GSM – *Mr. Victor Gunathilake* Chairman,Radio Society of Sri Lanka – *Mr. Ravi Ariyawickrama*, Director,Sarvodaya
	▪ US Indian Ocean Tsunami Warning System Program	– *Mr. S.H.M.Fakhruddin,* Consultant (ADPC)
13:00 – 14:00	*Lunch*	
SESSION 3:		
14:00 – 16:00	**Discussion**	– Mr. Kent Halling, Consultant (ITU)
16:00 – 16:20	*Tea Break*	
SESSION 4		
16:20 – 17:00	Summary of Issues, and Conclusion	– Mr. Kent Halling, Consultant (ITU)
	Recommendations by ITU and Action Items	– Mr. Kent Halling, Consultant (ITU)
17:00	Closing Remarks	– Mrs. P.R.Amarasiri , Director Legal Affairs (TRCSL)

Appendix 2: Participant List

ITU Workshop on Emergency Telecommunications for Disaster Management in Sri Lanka on 23rd March 2006 at TRCSL Conference Hall

No	Organization	Address	Name	Designation	Telephone	Fax	E- mail
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3	Asian Disaster Preparedness Center (ADPC)	Asian Disaster Preparedness Center, Asian Institute of Technology, PO Box 4, Klong Luang, Pathumthani 12120 Thailand.	Ms. Susan Espinueva	Technical Manager	66(0) 25165900	66 (0) 25245350	susan@adpc.net
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6			Ms. Kalani Dharmasiri (SLBC)	Radio Journalist	2691972 0773596228	2696128	
7	Department of Meteorology	Department of Meteorology, No. 383, Bauddhaloka Mawatha, Colombo 07	Mr. Nuwan Kumarasighe	Engineer	2681039	2698311	meteo@slt.lk
8	Disaster Management Center	Disaster Management Center, No. 14, Sir Baron Jayathilaka Mawatha, Colombo 01	Mr. A.R.D.Siriwansa	Deputy Director Operation	2441570	2441571	dgdmcsl@gmail.com
9			Mr. S.M.D. Wijesooriya	Assistant Director	2441574	2441571	dgdmcsl@gmail.com

No	Organization	Address	Name	Designation	Telephone	Fax	E- mail
10	Ministry of Disaster Relief Services National Disaster Mgt. Centre	No.189, Galle Rd, Colombo 3	Mr. Nimal Hettiarachchi	Director	2431590	2431593	dndmc@sltnet.lk
11	IFRC, Sri Lanka Delegation	IFRC, Sri Lanka Delegation, Disaster Management Coordinator, IFRC, Sri Lanka Delegation, No. 16/2 Gregory's Road, Colombo 7	Mr. Hamid Gore	Disaster Management Coordinator	4528698 0773157668 4715977-8 0773184961		Charlesgodfrey.byamugisha@ifrc.org Hamid.gore@ifrc
12			Mr. K. Munas	Disaster Management Coordinator	0777874980		apodm@slrc.org
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14	Ministry of Defence Public Security, Law and Order	Ministry of Defence Public Security, Law and Order, No. 15/5, Baladaksha Mawatha, Colombo 3	Mr. Janaka Mudalige	Director Information Technology	0773166242	2389024	publicsecurity@sltnet.lk
15	National Building Research Organization	National Building Research Organization, No. 99/1 Jawatta Road, Colombo 5	Ms. Kumari Weerasinghe	Engineer	2588946	2502611	nbro@sltnet.lk
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17			Mr. Wasantha Guruge	President	2495807	2697336	creaelec@slt.lk
18	Sri Lanka Army	Sri Lanka Army Head Quarters, PO Box 553, Colombo	Colonel KRP Rowel	Colonel SLARMY	2342818 0773261840	2855361	rrowel@yahoo.com
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20	Sri Lanka Air Force	Sri Lanka Air Force, Sir Chiththampalam A Gardiner Mw, Colombo 2	Mr. Rohan Pathirage	Group Captain	2432217		

No	Organization	Address	Name	Designation	Telephone	Fax	E- mail
21	Sri Lanka Police	Sri Lanka Police, Head Quaters	SSP R.S.P. Siriwardana	Director Communications	2854851	2826800	dircomm@police.lk
22	Reconstruction and Development Agency (RADA) [TAFREN]	Reconstruction and Development Agency (RADA), No. 21, Janadhipathi Mw, 6th Floor, Colombo 1	Mr. Denver De Silva	Risk Management Director			denver@tafren.gov.lk
23			Ms. Rachel C. Perera	Director, donor/NGO/Civil Society Coordination.	2426161 0773171762	2426160	rachel@tafren.gov.lk
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30			Mr. Kolitha Mandanayake	Senior Manager IT	5322227 0712269009	5339971	kolitha@lankabell.com
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No	Organization	Address	Name	Designation	Telephone	Fax	E- mail
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33	Hutchison Telecommunications Lanka Ltd	Hutchison Telecommunications Lanka Ltd, 234,Galle Rd, Co.14	Mr. George L.Fernando	Manager Planning	0788632632 0785660115	0788632188	george@Hatchison.lk
34	UNDP	202-204, Bauddhaloka Mawatha, Colombo 7	Mr. Ramraj Narasimhan	Disaster Mgt. Programme Office	258069	533370	Ramraj.narasimhan@undp.org
35			Ms. Anita Shah	IUNV Disaster Mgt.	2580691	5333709	
36	UN Humanitarian Information Center	202-204, Bauddhaloka Mawatha, Colombo 7	Mr. Patrick Gorden		0773295227		Gordon2@un.org
37	Ceylon Electricity Bo	No.50, Sir.Chittampalam A.Gardiner Mw, Co.2	Mr. P.B.M. Wijayasantha	CE (Systems)	2441935 0777917949 0714115632	2441935	chairmanceb@ceb.lk cecomsys@ceb.lk
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40	Sarvodaya	No.98, Rawatawatta Rd, Moratuwa	Dr. Vinya Ariyaratne	Executive Director	2647159	2656512	ssmplan@sri.lanka.net
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No	Organization	Address	Name	Designation	Telephone	Fax	E- mail
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